

**DOWEX MSA-1 C**

A Macroporous Strong Base Anion Exchange Resin for Mixed Bed Demineralization

Applications

Product	Type	Matrix	Functional group
DOWEX* MSA-1 C	Type 1 strong base anion	Styrene-DVB, macroporous	Quaternary amine

Guaranteed Sales Specifications		Cl ⁻ form
Total exchange capacity, min.	eq/l	1.0
	kgr/ft ³ as CaCO ₃	21.9
Water content	%	56 - 64
Bead size distribution†		
>1.4 mm, max. (14 mesh)		0
>1.2 mm, max. (16 mesh)		2
<0.42 mm, max. (40 mesh)		2
Whole beads, min.	%	95

Typical Physical and Chemical Properties		Cl ⁻ form
Total swelling (Cl ⁻ → OH ⁻)	%	15
Particle density	g/ml	1.06
Shipping weight	g/l	670
	lbs/ft ³	42

**Recommended
Operating
Conditions**

- Maximum operating temperature 100°C (212°F)
- pH range 0-14
- Bed depth, min. 450 mm (1.5 ft)
- Flow rates:
 - Service/fast rinse 5-50 m/h (2-20 gpm/ft²)
 - Service/condensate polishing 40-150 m/h (16-60 gpm/ft²)
 - Backwash See Figure 1
 - Regeneration/displacement rinse 1-10 m/h (0.4-4 gpm /ft²)
- Total rinse requirement 3-6 Bed volumes
- Regenerant:
 - Type 4-8% NaOH
 - Temperature Ambient or up to 50°C (122°F) for silica removal

† For additional particle size information, please refer to Particle Size Distribution Cross Reference Chart (Form No. 177-01775).

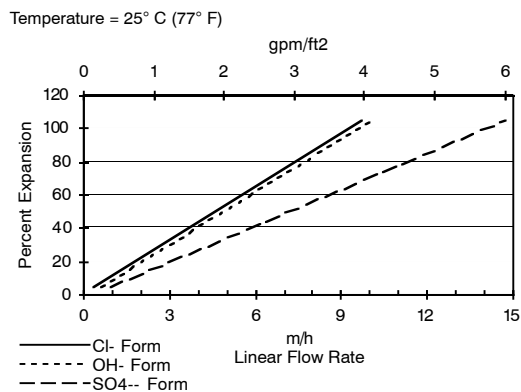
Typical properties and applications

DOWEX MSA-1 C strong base anion exchange resin is a condensate grade macroporous resin with exceptional physical stability and resistance to osmotic shock.

Packaging

25 liter bags or 5 cubic feet fiber drums

Figure 1. Backwash Expansion Data

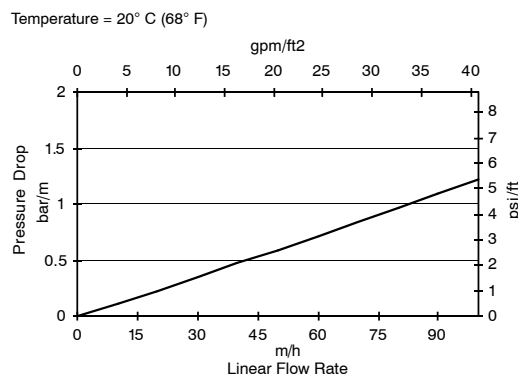


For other temperatures use:

$$F_T = F_{77^\circ\text{F}} [1 + 0.008 (T_{\circ\text{F}} - 77)], \text{ where } F \equiv \text{gpm/ft}^2$$

$$F_T = F_{25^\circ\text{C}} [1 + 0.008 (1.8T_{\circ\text{C}} - 45)], \text{ where } F \equiv \text{m/h}$$

Figure 2. Pressure Drop Data



For other temperatures use:

$$P_T = P_{20^\circ\text{C}} / (0.026 T_{\circ\text{C}} + 0.48), \text{ where } P \equiv \text{bar/m}$$

$$P_T = P_{68^\circ\text{F}} / (0.014 T_{\circ\text{F}} + 0.05), \text{ where } P \equiv \text{psi/ft}$$

Warning: Oxidizing agents such as nitric acid attack organic ion exchange resins under certain conditions. This could lead to anything from slight resin degradation to a violent exothermic reaction (explosion). Before using strong oxidizing agents, consult sources knowledgeable in handling such materials.

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